J. S. Patrie.

Pump.

No. 112,177. Patented Feb. 28, 1871.

Fig. 1.

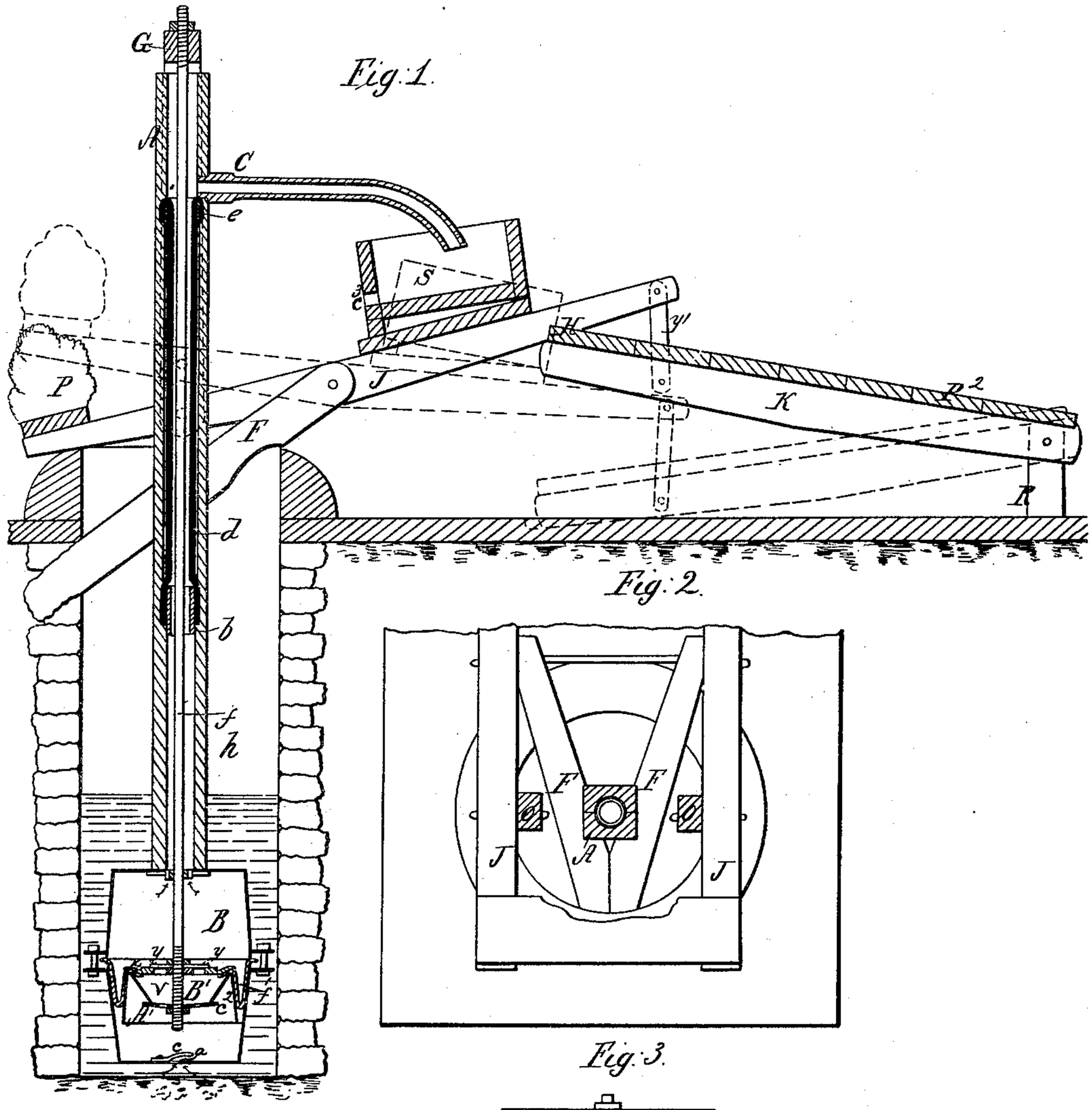
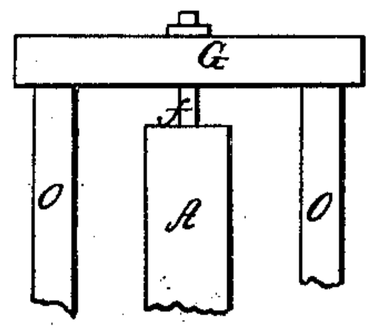


Fig. 2.

Fig. 3.



Witnesses;
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JOHN S. PATRIC, OF ROCHESTER, NEW YORK, ASSIGNOR TO HIRAM LAWTON, OF SAME PLACE.

Letters Patent No. 112,177, dated February 28, 1871.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN S. PATRIC, of the city of Rochester, in the State of New York, have invented a new and useful Pump; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a vertical section.

Figure 2 is a top view of the curbing of the well, showing the position of braces forming the fulcrum of the levers.

Figure 3 is a front elevation of part of the induction-pipe, and the connecting-rods and cross-bar, to which the plunger-rod is attached.

This invention will be understood from the drawing and specification.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

On the bottom of the eduction-pipe A of a pump I attach a metal water-chamber, B, closed at both ends, and made in two parts, fastened together by means of bolts put through flanges on the edge of each.

In the bottom of the chamber an induction-port, *a*, is made, which is provided with a valve, *c*.

Inside of the eduction-pipe A I place a tube, *d*, of India rubber or other suitable material, which extends from the discharge-pipe C down to any required point below the line of frost, and is made less than the diameter of the bore of the pipe A, which is enlarged in this section.

In the bottom of the rubber tube a metal ring, *b*, is inserted, which presses it out to fit the bore of the pipe A, and on the outside of the top another metal ring, *e*, is placed and a portion of the rubber is drawn over it; and the ring presses it out also to fit the bore, as shown in fig. 1, to prevent the water getting in between the rubber tube *d* and pipe A.

The eduction-pipe A is rigidly fastened to the braces F, which form the fulcrum of the compound levers H.

I then pass down through the pipe A a rod *f*, which extends down into the chamber B, on the bottom of which is fastened a plunger, B′.

This plunger is formed by making a metal ring, A′, smaller in diameter than the chamber to admit a packing—the inside being made a cone-shape about half through, as shown at *v*, in fig 1.

On the top I fit a cover, *x*, in which two or more eduction-ports are made, which have valves *y* to prevent the water flowing back when the rod is moving upward; these valves are held in their places by the rod *f* on the bottom of the cone-shaped part B′.

A cover, c^2, is also provided, through which there are holes to allow the water to pass.

The packing f^1 of the plunger B′ is similar to that in my patent dated May 1, 1866. But the plunger being inverted, the packing unfolds on the downward stroke, and *vice versa*, and is by this arrangement more simply fitted and effectual, the packing being inserted between the cover *x* and the ring A′; the valves *y* are placed on the cover; the rod *f* is then passed through and screwed into the lower cover c^2, holding all firmly together; the edge of the packing is then placed between the two parts of the chamber B and are held firmly between their flanges.

The top of the rod *f* is passed through the cross-bar G, which is sustained by posts *o* bolted to the short end of the compound lever H, over the well *h*, so that as the lever moves it causes the rod *f* and its attachments to work vertically.

The braces F are placed so that they rest on the side of the top of the curbing of the well *h*, and may extend into the stone work on the opposite side, as shown in figs. 1 and 2, or may butt up against it.

The compound lever H consists of the single levers J and K, one of which, J, is pivoted to the braces F and extends back in the rear of the eduction-pipe A, and has a platform on which a counterbalance, P, is placed. To the other end of J the other single lever K is pivoted by a connecting-rod, *y′*, which may be shifted in and out to alter the power applied to the pump without altering the balance-weight P; and the lever K is also pivoted at the other end to a bearing, R, suitably fastened in a platform or in the ground.

On the single lever J a trough, S, is placed, having a hole, c^3, so that after the animal has left the platform of the lever K, and the lever J rises up, any water left will flow out, as the trough S is raised, at the side opposite the hole c^3.

The object of this invention is to make a pump by which the animal may draw the water required, and I find that this method of arranging the levers is preferable to the one set forth in my patent of June 5, 1866.

Its operation is as follows:

The animal going on the platform P^2 on the levers K of the compound lever H, depresses both parts of it and raises up the rod *f*, and the plunger B′ attached, which causes sufficient water to flow up through the pipe A, and, at the same time, drawing water from the well and fills the portion of the chamber B below the plunger.

After the animal leaves the platform the counter-

balance P causes the levers to raise and depress the plunger, and forces the water in the chamber B through plunger B′, in the direction shown by the arrows in fig. 1, and the weight of the animal by depressing the levers causes it to flow up the pipe A.

The rubber tube is placed in the pipe A so that if the water should freeze the movement of the rod will displace it, as ice will not adhere to rubber, and being smaller than the bore of the pipe A the water will cause it to expand and pass up by the side of the ice and melt it away.

The ring *b*, in addition to the pressing out the rubber tube, as set forth, serves to contract the bore of the eduction-pipe A at that point, and prevents the water from flowing out with a sudden gush and producing a noise that frequently frightens the animal.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement of the connecting-rods *o*, cross-bar G, piston-rod *f*, and compound lever H, as and for the purposes set forth.

JOHN S. PATRIC.

Witnesses:
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